

THE INVENTION CLAIMED IS:

1. A method of self-adjusting allocation of memory bandwidth in a network processor system comprising:

5 determining an amount of memory bandwidth of a network processor used by each of a plurality of data types; and

dynamically adjusting the amount of memory bandwidth allocated to at least one of the plurality of data types based on the determination.

2. The method of claim 1 wherein a total amount of memory bandwidth of the network processor used by the plurality of data types is configurable.

3. The method of claim 2 further comprising determining whether memory bandwidth may be allocated to at least one of the plurality of data types.

4. The method of claim 3 wherein determining whether memory bandwidth may be allocated to at least one of the plurality of data types includes determining a difference between a maximum amount of memory bandwidth of the network processor that may be used by the plurality of data types and the total amount of memory bandwidth of the network processor currently used by the plurality of data types.

5. The method of claim 3 wherein determining whether memory bandwidth may be allocated to at least one of the plurality of data types includes determining whether a port for transmitting data of at least one of the plurality data types may be activated.

6. The method of claim 1 wherein determining an amount of memory bandwidth of a network processor used by each of a plurality of data types includes:

5 determining a number of active ports of the network processor used to transmit data of each of the plurality of data types; and

 determining an amount of memory bandwidth allocated to each active port for each of the plurality of
10 data types.

7. The method of claim 6 wherein the amount of memory bandwidth allocated to each active port for a data type is the same.

8. The method of claim 6 wherein the amount of memory bandwidth allocated to each active port for an ATM protocol data type is configurable.

20 9. The method of claim 1 wherein the plurality of data types includes at least one of an ATM protocol data type and an Ethernet protocol data type.

10. The method of claim 9 wherein the Ethernet
25 protocol data type includes at least one of a Gigabit Ethernet data type and a Fast Ethernet data type.

11. The method of claim 1 wherein dynamically adjusting the amount of memory bandwidth allocated to at
30 least one of the plurality of data types based on the determination includes at least one of dynamically

activating and deactivating a port for transmitting data of at least one of the plurality of data types.

12. An apparatus comprising:

5 port activation logic, adapted to couple to a memory of a network processor and to interact with the memory so as to:

determine an amount of memory bandwidth of the network processor used by each of a plurality of data
10 types; and

dynamically adjust the amount of memory bandwidth allocated to at least one of the plurality of data types based on the determination.

15 13. The apparatus of claim 12 wherein a total amount of memory bandwidth of the network processor used by the plurality of data types is configurable.

20 14. The apparatus of claim 13 wherein the port activation logic is further adapted to determine whether memory bandwidth may be allocated to at least one of the plurality of data types.

25 15. The apparatus of claim 14 wherein the port activation logic is further adapted to determine a difference between a maximum amount of memory bandwidth of the network processor that may be used by the plurality of data types and the total amount of memory bandwidth of the network processor currently used by the plurality of data
30 types.

16. The apparatus of claim 14 wherein the port activation logic is further adapted to determine whether a port for transmitting data of at least one of the plurality data types may be activated.

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17. The apparatus of claim 12 wherein the port activation logic is further adapted to:

10 determine a number of active ports of the network processor used to transmit data of each of the plurality of data types; and

determine an amount of memory bandwidth allocated to each active port for each of the plurality of data types.

15 18. The apparatus of claim 17 wherein the amount of memory bandwidth allocated to each active port for a data type is the same.

20 19. The apparatus of claim 17 wherein the amount of memory bandwidth allocated to each active port for an ATM protocol data type is configurable.

25 20. The apparatus of claim 12 wherein the plurality of data types includes at least one of an ATM protocol data type and an Ethernet protocol data type.

30 21. The apparatus of claim 20 wherein the Ethernet protocol data type includes at least one of a Gigabit Ethernet data type and a Fast Ethernet data type.

22. The apparatus of claim 12 wherein the port activation logic is further adapted to at least one of

dynamically activate and deactivate a port for transmitting data of at least one of the plurality of data types.

23. A network processor system comprising:
5 a memory; and

a network processor coupled to the memory, the network processor comprising:

a memory controller;

a plurality of ports; and

10 port activation logic, coupled to the memory controller, plurality of ports and memory, and adapted to interact with the memory so as to:

determine an amount of bandwidth of memory used by each of a plurality of data types; and

15 dynamically adjust the amount of memory bandwidth allocated to at least one of the plurality of data types based on the determination.